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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,880	07/07/2003	Byung Soo Song	YHK-0108	6996

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EXAMINER

TRAN, THUY V

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,880

Applicant(s)

SONG, BYUNG SOO

Examiner

Thuy V. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is a response to the Applicant's filing on July 7th, 2003. In virtue of this filing, claims 1-11 are currently presented in the instant application.

Drawings Objection

1. The drawings are objected to because (1) Figs. 4 and 5 are not labeled correctly, and (2) an extra line is drawn after [10] in Fig. 7; it should be deleted.
2. Figures 4 and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections/ Minor Informalities

3. Claims 1, 3, and 5-9 are objected to because of the following informalities:

Claim 1, line 2, --having a plurality of pixels and a horizontal line unit-- should be inserted between "panel" and "," (introducing these elements herein to prepare for the description to be recited in claims 3 and 4);

Claim 3, line 4, "the" should be changed to --each--;

Claim 5, line 4, "the" should be changed to --a--;

Claim 6, line 4, "the" should be changed to --a--;

Claim 7, line 2, "the" should be changed to --a--;

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Claim 7, line 3, "said" should be deleted;

Claim 8, line 4, "the" should be changed to --an--;

Claim 8, line 14, "the" should be changed to --an--; and

Claim 9, line 9, "the" (first occurrence) should be changed to --a--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, the recitation "applying an equalizing pulse ... pseudo contour noise" in lines 5-9 renders the claim indefinite since it is not clear whether only the first gray level or the second gray level, or both, is (are) included in the equalizing pulse. In light of a portion of the submitted specification (the last paragraph of page 7), the two gray levels are included in the equalizing pulse. If this is true, deleting the word "any" in line 5 is suggested (Applicant is noted that, in regard to this matter, the term "any" in any related recitation contained in the abstract and the specification should also be deleted, for a proper characterization of the claimed invention). Clarification is required.

Claims 2-7 are rejected under 35 U.S.C. 112, 2nd paragraph, since they are dependent on claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kasahara et al. (U.S. Patent No. 6,414,657).

With respect to claim 1, as best understood, Kasahara et al. discloses, in Fig. 11, a video signal processing apparatus and a corresponding processing method comprising the steps of (1) forecasting pseudo contour noise (via pseudo contour noise quantity detector [38]; see Fig. 11) of an image to be display on the panel [24], and (2) applying an equalizing pulse (via [44]; see Fig. 11) having any one gray level of a first gray level higher than a gray level to be supplied and a second gray level lower than the gray level to be supplied in order to eliminate the forecasted pseudo contour noise (see col. 6, lines 44-45; and col. 19, lines 21-29).

With respect to claim 8, Kasahara et al. discloses, in Fig. 11, a video signal processing apparatus for a plasma display panel [24] comprising (1) a reverse gamma corrector [10] for making a reverse gamma correction of a gamma-corrected data inputted from an exterior, (2) field delay means [11] for delaying the reverse gamma-corrected data by one field, (3) an equalizing pulse supplier [38] for receiving a data at the (n+1)th field (wherein n is an integer) from the reverse gamma corrector [10] and a data at the nth field from the field delay means, thereby eliminating pseudo contour noise, and (4) a display data processor [12, 14, 16, 34, 44]

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for receiving the n^{th} field data and an equalizing pulse to convert them in such a manner to be suitable for a resolution format of the panel [24].

Allowable Subject Matter

8. Claims 2-7 and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- A method of processing a video signal in a plasma display panel wherein the step of forecasting the pseudo contour noise includes detecting a shift direction and a shift speed of a picture and a gray level value of data using data at the $(n+1)^{\text{th}}$ and n^{th} fields (wherein n is an integer), thereby forecasting the pseudo contour noise with the aid of the detected shift direction and speed of the picture and the detected gray level value of data, in combination with the remaining claimed limitations as called for in claim 2;
- A method of processing a video signal in a plasma display panel wherein the equalizing pulse having the first gray level and the equalizing pulse having the second gray level are supplied such that they are alternated for each pixel unit, in combination with the remaining claimed limitations as called for in claim 3;
- A method of processing a video signal in a plasma display panel wherein the equalizing pulse having the first gray level and the equalizing pulse having the second

gray level are supplied such that they are alternated for the horizontal line unit, in combination with the remaining claimed limitations as called for in claim 4;

- A method of processing a video signal in a plasma display panel wherein the equalizing pulse having the first gray level and the equalizing pulse having the second gray level are supplied such that they are alternated on a basis of a vertical synchronizing signal, in combination with the remaining claimed limitations as called for in claim 5;
- A method of processing a video signal in a plasma display panel wherein the equalizing pulse having the first gray level and the equalizing pulse having the second gray level are supplied such that they are alternated on a basis of at least two signals of a pixel signal, a horizontal synchronizing signal and a vertical synchronizing signal, in combination with the remaining claimed limitations as called for in claim 6;
- A method of processing a video signal in a plasma display panel further comprising a step of alternately applying equalizing pulses having the first and second gray levels to express a gray level value close to a gray level value to be displayed on an average basis, in combination with the remaining claimed limitations as called for in claim 7; and
- A video signal processing apparatus wherein the equalizing pulse supplier includes (1) an operation detector for receiving the (n+1)th and nth field data to detect a shift direction and a shift speed of a picture and a gray level of the nth field data, (2) a pseudo contour amount forecaster for forecasting an amount of the pseudo contour noise to be generated from the panel using the shift direction and the shift speed of a

picture and the gray level value of the nth field data, and (3) a compensator for receiving the amount of the pseudo contour noise to calculate an equalizing pulse to be compensated and supply a higher compensated equalizing pulse or a lower compensated equalizing pulse than the calculated equalizing pulse, in combination with the remaining claimed limitations as called for in claim 9 (claims 10-11 would be allowable since they are dependent on claim 9).

Citation of relevant prior art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Kang et al. (Pub. No.: US 2003/0169217 A1) discloses a method and apparatus for driving PDP.

Prior art Sim et al. (Pub. No.: US 2003/0080927 A1) discloses a method and apparatus for driving PDP.

Prior art Koo et al. (Pub. No.: US 2002/0175922 A1) discloses a method and apparatus for driving PDP.

Prior art Kasahara et al. (Pub. No.: US 2002/0005857 A1) discloses a method and apparatus for driving PDP.

Prior art Kasahara et al. (U.S. Patent No. 6,690,388) discloses a PDP display drive pulse controller.

Prior art Kasahara et al. (U.S. Patent No. 6,400,346) discloses a display apparatus.

Prior art Kasahara et al. (U.S. Patent No. 6,388,645) discloses a display apparatus.

Prior art Kasahara et al. (U.S. Patent No. 6,384,803) discloses a display apparatus.

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Prior art Kasahara et al. (U.S. Patent No. 6,353,424) discloses a display apparatus.

Prior art Kasahara et al. (U.S. Patent No. 6,351,253) discloses a display apparatus.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuy V. Tran
Examiner
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08/18/2004

A handwritten signature in black ink, appearing to read 'Thuy Tran', with a large, sweeping flourish at the end.